5 CONCLUSIONS AND NEXT STEPS

The preceding sections of this report and the attached appendices present the thorough analysis that was performed to determine the potential for transit ridership in the Bangor to Trenton corridor. With this information in hand, the Maine Department of Transportation is faced with the challenge of determining whether the results of these analyses provide enough information or show sufficient potential to make a determination about how to proceed with the next steps in the development of a transportation project. In order to assist them in meeting that challenge, this section of the report will focus on the conclusions and potential next steps associated with the proposed Bangor to Trenton transportation alternatives.

5.1 Conclusions

Conclusions can be drawn about the potential market, the alternatives, and the performance of the alternatives.

Potential Market Conclusions

- Maine attracts a very high level of tourist travel, primarily during the summer months. The Bangor to Trenton corridor is a gateway to one of the state's highest visited attractions: Acadia National Park and Mount Desert Island.
- The potential users of transportation services in the corridor are either residents or visitors.
- Since the majority of residents in the area make local trips or trips concentrated on the ends of the corridor, the percentage of total resident travel in the corridor that would or could actually use the proposed services is low.
- While a higher number and percentage of visitors could be expected to use the services for a variety of reasons, when compared with the overall size of the corridor's visitor market the majority of visitor trips would not be attracted to the services. This is because visitors to this region primarily arrive in autombiles often loaded with multiple passengers and gear and thus these visitors have made the decision to drive to Maine for reasons of convenience and not necessarily travel time. It is unlikely that once in the corridor these visitors would park their vehicles for an extended period of time in Bangor and avail themselves of the public transportation services to the island area. Additionally, the vast majority of drivers do not believe that congestion is a significant problem in Maine, and have little incentive to leave the convenience of their private vehicles. However, some auto users could be expected to shift or to use the services for intermediate trips once they have reached their destination.
- The combined resident and visitor travel market is more sensitive to changes in fare and service availability than they are to increases in roadway congestion or travel time.
- The travel market is sensitive to advance information, as mode of travel decisions are often made from home. Additionally, the market is responsive to knowledge of additional services that may surround or support the proposed services (i.e. Island Explorer).
- Visitors favor rail services over bus services.

Conclusions about the Conceptual Alternatives

- The bus services (Alts. 2 and 3) provide one-seat rides.
- Improvements in the infrastructure will result in better travel time for rail alternatives.
- The ferry alternative serves only Bangor to Bar Harbor trips and has the longest travel time. However, ferry services are often regarded as "scenic" and not merely a means of transportation.
- The busway alternative (Alternative 3) would preclude rail freight service. The light rail alternatives (Alts. 4 and 5) would result in time separation of light rail and freight service.
- The fact that resident riders traveling to and from Ellsworth would have to transfer at Trenton to get to Mount Desert Island for the rail alternatives is a negative.
- It is critical that the bus that picks up passengers at the BGR terminal is the same bus that serves the bus alternatives and alternative bus components, thereby limiting the number of transfers.

Conclusions About the Demand for the Alternatives

- The fastest light rail alternative (Alt. 4/LRT A) attracts the most riders due to its combination of speed, few transfers, and station stops. However, significant improvements are assumed to achieve that speed and the difference between that alternative and the "unimproved" light rail (Alt. 5/LRT B) in terms of ridership attracted is not great.
- The light rail alternatives (Alts. 4 and 5) are best at inducing visitors to shift access to the region from their existing mode to the new services. However, all of the alternatives are closely matched when it comes to inducing new trips from current visitors or attracting new visitors to the area based on the availability of the services.
- Alternative 1, which is the rail alternative that would require the least capital investment, also results in the lowest ridership. The multiple transfers and related slow travel time are the reasons that contribute to its low attractiveness.
- The resident trips that would be made on the various alternatives are Home-Based Work trips. Non-Home-Based and Home-Based other trips are more local in nature and thus would not be served well by the more corridor nature of the alternatives.
- The large majority of visitor trips (80%) that would be attracted to the services would be made by those who already visit Maine.
- The bus alternatives serve the resident market best, while the rail alternatives serve the visitor market best. This is somewhat supported by the public in the corridor, as they perceived a bus alternative to be more "in line" with what they thought was needed.
- Two stations in Bangor are needed. The station at BGR serves visitor trips and the station at the Bangor Waterfront serves trips to and from Bangor and connections to local services.
- July and August are almost identical in the level of ridership attracted by the alternatives, and they are the peak months of attraction. June and September are similarly matched. While ridership exists on the alternatives in the "non-seasonal" months, that ridership is significantly lower than the peak season ridership and is primarily (if not exclusively) supported by resident work trips.
- The ferry alternative had surprisingly high visitor ridership in spite of its significantly longer travel time. This is the case presumably because the ferry trip would be considered as an attraction as well as transportation.
- The development of the other transit services envisioned in Maine's Strategic Passenger Transportation Plan would increase the attractiveness of Bangor to Bar Harbor service.

Overall, the alternatives will offer some relief to travel congestion. If the travel market to Maine gets larger, the ridership numbers would increase and thus the level of relief they would provide would be more significant. Another way to look at it is that the existence of alternative modes of transportation will not only enable more efficient travel but could accommodate increased demand to the region that might not have been attracted or accommodated efficiently without the services. Alternatively, if the travel market to Maine declines as a whole, the ridership projections are similarly at risk for reductions.

5.2 Next Steps

With the demand estimation phase of the Bangor to Trenton Transportation Alternatives Study in hand, decisions need to be made to determine if the concepts identified in this report should be advanced for further study. The following steps would likely follow this effort:

1. The Maine Department of Transportation would review the results of this report and determine if the alternative ridership seems promising enough to conduct additional analyses. This decision needs to be made in the context of not only the Bangor to Trenton corridor but also in relation to the goals of the state's Strategic Passenger Transportation Plan.
2. Maine DOT would have to determine if the alternatives should be modified. For instance, the study results indicate that changes in service frequency could result in additional riders. Additionally, changes in fare could have similar results. Perhaps even the bus alternatives could evolve from the expected motorcoach vehicle to a bus rapid transit system, combining the ease of bus with the perceived efficiency and comfort of rail. Other suggestions could be to test combinations of alternatives (i.e. bus and ferry) to see if two investments offer changes in ridership.
3. Maine DOT would have to determine if the ridership model should be further refined. Some tools that would lend greater accuracy would be a resident survey, more detailed analysis of the seasonal employment market or a better understanding of congestion in the corridor. Additionally, more detailed information about projected air travel at BGR and BHB, Bangor Waterfront investments or other major development expectations in the area would also lend refinement to the results.
4. Additional analysis would be conducted to assess the physical and institutional feasibility of the alternatives and the operating plans. Several assumptions were made during this study regarding the condition of the tracks in the right-of-way, improvements that would be needed to achieve efficiency, that the ROW could support the developed operating plan and that properties to accommodate stations in the identified locations would be available. Additionally, assumptions were made regarding sharing of right-of-way and/or track with GTI. Assumptions were also made that the Calais Branch could be physically extended to Hancock County- Bar Harbor Airport in Trenton. All of these assumptions would have to be confirmed.
5. Decisions would have to be made regarding whether freight service on the Calais Branch would be required in combination with passenger service to make the line feasible financially in light of the improvements that are needed. If freight service is an integral factor, then institutional issues related to "time of day" separation between the freight and light rail services would have to be initiated.
6. Cost estimates for capital expenditures and operating/maintenance expenditures would have to be developed to see what type of investment would be needed to bring these alternatives to existence. Additionally, revenue calculations would be performed to determine how much fare money the project would produce. Once cost estimates were completed, Maine DOT

would have to evaluate the benefits (i.e. ridership) of the project against the impacts of the project (costs). Only with this information in hand could Maine DOT fully determine the worth of the investment.

7. If a decision is made to proceed with the investment, a full environmental document would have to be prepared that includes a more thorough alternatives analysis along with an environmental impact analysis. Funding would have to be discussed and identified. This project would need to compete nationally with other transit projects for Section 5309 funding. Alternative sources of funding should be sought as the primary means of funding these services. Investigation into funding options in association with the National Park Service should be conducted.

As the case studies indicated, another avenue that Maine DOT should investigate in concert with the NPS is the closure of Acadia National Park to automobile traffic. While traffic to Mount Desert Island could not be restricted, access to the Park could be. This would require more substantial monitoring and "gated" passage points to access the Park, but in the end could result in preservation of the Park's resources.

If Maine DOT proceeds with the service, it is imperative that the availability of the service is well advertised to prospective Maine visitors. Additionally, Maine DOT could enhance the attractiveness of the service by adapting a theme to the service or giving it amenities that make it more than just a trip but rather an enhanced portion of the Maine vacation experience.

BIBLIOGRAPHY

The following reports created for this study by the Study Team were used as inputs in the Final Report:

- Operating Plans Report, July 2001
- Transportation Issues and Efforts at Acadia and Other National Parks, June 2001
- Visitor Ridership to Selected Tourist Destinations on Existing Rail Lines, June 2001
- Description of Current Visitors Travel Market in the Bangor - Trenton Corridor, September 2001
- Description of Current Residents Travel Market in the Bangor - Trenton Corridor, August 2001

GLOSSARY

Alignment - the specific route associated with a particular alternative.

Alternative - a specific alignment, mode, and operating plan intended to meet the transportation need.

BGR - Bangor International Airport

BHB - Hancock County - Bar Harbor Airport

Bus - a rubber-tired, self-propelled, manually steered vehicle with fuel supply carried on board the vehicle.

Busway - a roadway reserved for buses only. It may be a grade separated or controlled access roadway.

Calais Branch - the State-owned right-of-way paralleling U.S. Route 1A between Brewer and Ellsworth.

Capacity - the numbers of people or vehicles that can be accommodated within a defined mode.

Case Study - a comparative analysis of a related experiences on a given subject (i.e. levels of transportation at National Parks)

Catamaran - a vessel with twin hulls joined by a central superstructure. These types of vessels are used to operate high-speed ferry service because the hull design reduces frictional resistance between the vessel and the surrounding water body.

Commuter Rail Vehicle - a railroad coach configured for passenger traffic that is not independently propelled and requires one or more locomotives for propulsion.

Diesel Multiple Unit (DMU)- a self-propelled railroad coach configured for passenger traffic powered by diesel motors carried on-board the vehicle and capable of operating as a single unit or in a train of such units operated from single control.

Fare - a fee charged for transportation

Ferry - a vessel that carries passengers and/or vehicles over a body of water.

Frequency - the interval between vehicles moving in the same direction on a particular route.

GTI - Guilford Transportation Industries

Induced Demand - additional and/or new trips that are made by travelers because transit service makes a destination more attractive.

Intermodal - those issues or activities which involve or affect more than one mode of transportation, including transportation connections, choices, cooperation and coordination of various modes.

Intermodal Facility - a single station served by multiple modes of transportation (automobile, rail, bus, etc.).

Light Rail Vehicle- lightweight rail coach configured for passenger traffic operating singly (or usually two-car trains) on fixed rails in right-of-way that is usually (but not necessarily) separated from other traffic. These vehicles are normally driven by electric power from overhead lines, although recent technological advancements have allowed self-propulsion via on-board diesel motors (see Diesel Multiple Unit).

Mode - a form of transportation (automobile, rail, bus, etc.); comprised of vehicles.

Mode Shift - a change in trip making patterns from an existing mode of transportation to a new mode of transportation (i.e. traveling by train instead of automobile).

Motorcoach Bus - A bus with separate luggage compartments, and usually with restroom facilities and high-backed seats for use in high-speed long-distance service.

Non-Work Trips - trips made by people for reasons other than travel to employment. These trips may include recreational travel, shopping, or other destinations. Non-work trips are divided into home-based trips and non home-based trips. Home-based trips are trips that originate or terminate at home. Non home-based trips originate and terminate in destinations other than home.

Multimodal - see intermodal.

One-Seat Ride - a direct trip to a destination in which the passenger does not have to leave the vehicle to transfer to another vehicle or mode in order to complete their trip

Operating Plan - a schedule that defines stopping locations and travel times.

Peak - the time period when transit operations experience the heaviest system demand

Railroad Right-of-Way - land dedicated to railroad use.

Resident Travel Market - a subdivision of the overall travel market consisting of passengers who use the proposed transit service for work trips and non-work trips

Ridership - the number of people that use a particular alternative

Ridership Forecast - the number of passengers projected to ride the proposed transit service in the future

Ridership Model - a computer tool used to calculate ridership.

Rolling Stock - the vehicles used in providing transit service for passengers.

Study Area - the area in which a transportation alternative is proposed with defined boundaries that includes origins, destinations, infrastructure, etc

Study Corridor - a defined study area between two points

Survey - a research method, including a questionnaire, used to gain data for use in developing a ridership model.

Transfer - to shift from one mode of transportation or vehicle to another mode of transportation or vehicle (i.e. bus to train)

Transit Service - transportation by bus, rail or other conveyance, either publicly or privately owned, which provides to the public general or special service on a regular and continuing basis.

Travel Market - the population in a geographic area that makes trips in order to access employment, recreation or other destinations

Travel Time - the amount time spent in transit from an origin to a destination.

Visitor Travel Market - a subdivision of the travel market composed tourists and business travelers

Work Trips - trips made between employment destinations, in both directions.